

Grid Tied Solar String Inverters

HIVERTER-Si Series

1.1 kW to 3.3 kW – Single Phase (1000 VDC)

Key Features

- Wide DC input range
- Transformer less topology
- Low sensitivity to the grid disturbance to avoid unnecessary disconnection from the grid
- 1 independent MPPT to ensure optimal energy harvest
- MPPT accuracy is more than 99.9%
- Wide operating temperature range from -30°C to 60°C
- IP 65 protection for Indoor & outdoor application
- Easy to install & maintain
- DC power overloading
- User friendly interface like RS 485/Wi-Fi
- Easy to read LCD display with all operational status & necessary data as per requirement
- Type III SPD (Surge Protection Device)
- Remote monitoring using a mobile based application through GPRS/Wi-Fi



Technical Standards

No.	IEC Standard	IEC Certificate
1	Environmental Testing	IEC 60068-2 (1,2,14,30)
2	Efficiency Measurement	IEC 61683
3	Product Safety Standard	IEC 62109-1, 2
4	Grid Connectivity Standard/Utility Interface	IEC 61727
5	Test Procedure for Islanding Prevention Measures for Utility Interconnected PV Inverters	IEC 62116
6	Electromagnet Compatibility & Electro Magnet Interference	IEC 61000-6-2 IEC 61000-6-4

Technical Specifications

Solar String Inverter – 1.1 kW To 3.3 KW (1Ph.)

HIVERTER-Si Series Single Phase with Single MPPT		Si-1.1K-H3	Si-1.6K-H3	Si-2.2K-H3	Si-2.7K-H3	Si-3K-H3	Si-3.3K-H3
Input (DC)	Recommended PV input power	1500 W	2200 W	3000 W	3700 W	4100 W	4500 W
	Max. input voltage	500 V	500 V	500 V	550 V	550 V	550 V
	Start-up input voltage	70 V					
	Rated input voltage	360 V					
	MPPT voltage range	50 - 500 V			50 - 550 V		
	Full load DC voltage range	110 - 450 V	150 - 450 V	200 - 450 V	250 - 500 V	275 - 500 V	300 - 500 V
	Max. input MPPT current	12 A					
	Max. DC input short circuit current per MPPT	15 A					
	Number of MPPT/String per MPPT	1 / 1					
	Input terminal type	MC 4					
Output (AC)	Rated power	1.1 kW	1.6 kW	2.2 kW	2.7 kW	3 kW	3.3 kW
	Max. AC power	1.1 kVA	1.6 kVA	2.2 kVA	2.7 kVA	3 kVA	3.3 kVA
	Max. output current	5.3 A	7.7 A	10.6 A	13 A	14.5 A	16 A
	Nominal grid volatge	L / N / PE, 230 Vac					
	Grid voltage range	180 Vac-276 Vac (According to local standard)					
	Nominal frequency	50 / 60 Hz					
	Grid frequency range	45~55 Hz / 55~66 Hz (According to local standard)					
	THDi	<3%					
	Power factor	1 default (adjustable ±0.8)					
Efficiency up to	Max. Efficiency up to	97.43%	97.50%	97.47%	97.38%	97.20%	97.20%
	European weighted efficiency	96.9%			97.2%		
Protection	Anti-Islanding protection	Yes					
	DC reverse polarity protection	Yes					
	Over temp protection	Yes					
	Leakage current protection	Yes					
	Over voltage protection	Yes					
	Over current protection	Yes					
	Earth fault protection	Yes					
	SPD	MOV: Type III standard					
Communication	Standard Communication mode	Rs 485, USB (Optional: Wi-Fi / Ethernet)					
General Data	Topology	Transformer less					
	Ambient temperature range	-30°C ~ +60°C					
	Allowable relative humidity range	0~100%					
	Noise	<25 dB					
	DC switch	Optional					
	Cooling	Natural convection					
	Max. operating altitude	2000 m					
	Dimension	303 x 260.5 x 118 mm			321 x 260.5 x 131.5 mm		
	Support bracket	Wall - mounted					
	Weight	5.5 kg			6.3 kg		
	Display	LCD + LED					
	Degree of protection	IP 65					
Standard	EMC	EN 61000 - 6 - 1, EN 61000 - 6 - 2, EN 61000 - 6 - 3, EN 61000 -6 - 4,					
	Safety standard	IEC 62116, IEC 61727, IEC 61683, IEC 60068(1,2,14,30), IEC 62109 - 1/2					
	Grid standards	AS 4777, VDE V 0124 - 100, VDE V 0126 - 1 - 1, VDE -AR -N 4105, EN 50438, G83 / 2, C10 / 11, RD 1699					

Hitachi Hi-Rel Power Electronics Private Limited

Registered Office: B-52, Corporate House, Near Judges Bunglow, Bodakdev, Ahmedabad-380054, Gujarat, India.

Tel: +91-79-6604 6200, Fax: +91-79-6604 6243

Manufacturing Works: Plot No. SM 3 & 4, Sanand GIDC II, Industrial Estate, Bol Village, Sanand-382 110, Gujarat, India.

Tel: +91-2717-678 777, Fax: +91-2717-678 700

Gandhinagar Facility: B-14/1 & 171, GIDC Electronics Zone, Sector - 25, Gandhinagar - 382 028, Gujarat, India.

Tel: +91-79-6170 0500

Helpline No.: (080) 6112 0800 (For Sales & Service Support) contact@hitachi-hirel.com www.hitachi-hirel.com

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Grid Tied Solar String Inverters

HIVERTER-Si-N Series
3 kW & 6 kW - Single Phase

NEW
GENERATION

Key Features

- Wide DC input range
- Transformer less topology
- Low sensitivity to the grid disturbance to avoid unnecessary disconnection from the grid
- 2 independent MPPT to ensure optimal energy harvest
- MPPT accuracy is more than 99%
- Wide operating temperature range from -30°C to 60°C
- IP 65 protection for Indoor & outdoor application
- Easy to install & maintain
- DC power overloading
- User friendly interface like RS 485/Wi-Fi
- Easy to read LCD display with all operational status & necessary data as per requirement
- Type III SPD (Surge Protection Device)



Technical Standards

No.	IEC Standard	IEC Certificate
1	Environmental Testing	IEC 60068-2 (1,2,14,30)
2	Efficiency Measurement	IEC 61683
3	Product Safety Standard	IEC 62109-1, 2
4	Grid Connectivity Standard/ Utility Interface	IEC 61727
5	Test Procedure for Islanding Prevention Measures for Utility Interconnected PV Inverters	IEC 62116
6	Electromagnet Compatibility & Electro Magnet Interference	IEC 61000-6-2 IEC 61000-6-4

Technical Specifications

Solar String Inverter – 3 kW to 6 kW (1Ph.)

HIVERTER-Si-N Series Single Phase with Dual MPPT		Si-3K-N		Si-3.6K-N		Si-4K-N		Si-4.6K-N		Si-5K-N		Si-6K-N	
Input (DC)	Recommended PV input power	4.5 kWp		5.4 kWp		6 kWp		7 kWp		7.5 kWp		9 kWp	
	Max DC power for single MPPT	3.5 kW		3.5 kW		3.5 kW		3.5 kW		3.75 kW		4.5 kW	
	Number for independent MPPT	2											
	Number for DC inputs	1 for each MPPT											
	Max. input voltage	600 V											
	Start-up input voltage	90 V											
	Rated input voltage	380 V											
	MPPT voltage range	80 V - 550 V											
	Full load DC voltage range	200 V - 500 V		200 V - 500 V		200 V - 500 V		200 V - 500 V		210 V - 500 V		260 V - 500 V	
	Max. input MPPT current	15 A / 15 A											
Max. DC input short circuit current per MPPT	22.5 A / 22.5 A												
Output (AC)	Rated power	3 kW		3.68 kW		4 kW		4.6 kW		5 kW		6 kW	
	Max. AC power	3.3 kVA		3.68 kVA		4.4 kVA		4.6 kVA		5.5 kVA		6 kVA	
	Max. output current	15 A		16 A		20 A		23 A		25 A		29 A	
	Nominal grid voltage	L / N / PE, 230 Vac											
	Grid voltage range	180 Vac - 276 Vac (According to local standard)											
	Nominal frequency	50 Hz / 60 Hz											
	Grid frequency range	45 Hz - 55 Hz / 55 Hz - 65 Hz (According to local standard)											
	Active power adjustable range	0~100%											
	THDi	<3%											
	Power factor	1 default (adjustable+/-0. 8)											
Performance	Max. Efficiency up to	98.11%		97.82%		98.11%		97.78%		97.85%		97.84%	
	European weighted efficiency up to	97.3%						97.5%					
	Self-consumption at night	<1W											
Protection	DC reverse polarity protection	Yes											
	DC switch	Optional											
	Protection class/Overvoltage category	I / III											
	Safety protection	Anti - islanding, RCMU, Ground fault monitoring											
	Input / Output SPD	MOV: type III standard											
Communication	Standard Communication mode	Rs485/ USB/ Bluetooth (Optional: Wi-Fi)											
General Data	Ambient temperature range	-30℃~-+60℃											
	Topology	Transformer - less											
	Degree of protection	IP 65											
	Allowable relative humidity range	0~100%											
	Max. operating altitude	4000 m											
	Noise	<25 dB											
	Weight	9.2 kg						10 kg					
	Cooling	Natural											
	Dimension (mm)	349*344*164 mm											
	Display	LCD & Bluetooth + APP											
	Standard Warranty	5 Years (Optional: 7 & 10 Years)											
Standard	EMC	EN 61000 - 6 - 2, EN 61000 - 6 - 3, EN 61000 - 3 - 2, EN 61000 - 3 - 3, EN 61000 - 3 - 11, EN 61000 - 3 - 12											
	Safety standard	IEC 62109 - 1 / 2, IEC 62116, IEC 61727, IEC - 61683, IEC 60068 (1,2,14,30)											
	Grid standards	VDE - AR - N 4105, DE V 0126 - 1 - 1, V 0124 - 100, AS / NZS 4777, CEI 0 - 21, G98 / G99, C10 / 11, EN 50549, RD 1699											

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Grid Tied Solar String Inverters

HIVERTER-Si-N Series

3.3 kW to 12 kW – Three Phase (1100 VDC)

NEW
GENERATION

Key Features

- Wide DC input range
- True three phase bridge, transformer-less topology
- Low sensitivity to the grid disturbance to avoid unnecessary disconnection from the grid
- 2 independent MPPT to ensure optimal energy harvest
- MPPT accuracy is more than 99.9%
- Wide operating temperature range from -30°C to 60°C
- IP 65 protection for Indoor & outdoor application
- Easy to install & maintain
- DC power overloading
- User friendly interface like RS 485/Wi-Fi
- Easy to read LCD display with all operational status & necessary data as per requirement
- Type II SPD (Surge Protection Device)



Technical Standards

No.	IEC Standard	IEC Certificate
1	Environmental Testing	IEC 60068-2 (1,2,14,30)
2	Efficiency Measurement	IEC 61683
3	Product Safety Standard	IEC 62109-1, 2
4	Grid Connectivity Standard/Utility Interface	IEC 61727
5	Test Procedure for Islanding Prevention Measures for Utility Interconnected PV Inverters	IEC 62116
6	Electromagnet Compatibility & Electro Magnet Interference	IEC 61000-6-2 IEC 61000-6-4

Technical Specifications

Solar String Inverter – 3.3 kW to 12 kW (3Ph.)

HIVERTER-Si-N Series Three Phase with Dual MPPT		Si-3.3K-N	Si-4.4K-N	Si-5.5K-N	Si-6.6K-N	Si-8.8K-N	Si-11K-N	Si-12K-N	
Input (DC)	Recommended PV input power	4.5 kWp	6k Wp	7.5 kWp	9 kWp	12 kWp	15 kWp	18 kWp	
	Number of independent MPPT	2							
	Number of DC inputs	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 2	
	Max. input voltage	1100 V							
	Start-up input voltage	160 V							
	Rated input voltage	650 V							
	MPPT operating voltage range	140 - 1000 V							
	Full power MPPT voltage range	160 V - 850 V	190 V - 850 V	240 V - 850 V	290 V - 850 V	380 V - 850 V	420 - 850 V	460 - 850 V	
	Max. input current per MPPT	15 A / 15 A	15 A / 15 A	15 A / 15 A	15 A / 15 A	15 A / 15 A	15 A / 15 A	15 A / 30 A	
Maximum DC input short circuit current per MPPT	22.5 A / 22.5 A	22.5 A / 22.5 A	22.5 A / 22.5 A	22.5 A / 22.5 A	22.5 A / 22.5 A	22.5 A / 22.5 A	22.5 A / 45 A		
Output (AC)	Rated power	3 kW	4 kW	5 kW	6 kW	8 kW	10 kW	12 kW	
	Max. AC power	3.3 kVA	4.4 kVA	5.5 kVA	6.6 kVA	8.8 kVA	11 kVA	13.2 kVA	
	Max. output current	5 A	6.7 A	8.3 A	10 A	13.3 A	16.7 A	20 A	
	Nominal grid volatge	3 / N / P E, 230 Vac / 240 Vac							
	Grid voltage range	310 Vac - 480 Vac (according to local standard)							
	Nominal frequency	50 / 60 Hz							
	Grid frequency range	45~55 Hz / 55~65 Hz (according to local standard)							
	Active power adjustable range	0~100%							
	THDi	<3%							
Power factor	1 default (adjustable ±0.8)								
Performance	Max. Efficiency up to	98.18%	98.26%	98.23%	98.23%	98.33%	98.34%	98.30%	
	European weighted efficiency	97.50%				98.00%			
	Self-consumption at night	<1 W							
Protection	DC reverse polarity protection	Yes							
	Anti-Islanding protection	Yes							
	Ground fault monitoring	Yes							
	PV-array string fault monitoring	Yes							
	Anti-reverse power function	Yes							
	DC Switch	Yes							
	Input / Output SPD	PV: type II standard, AC: type II standard							
Communication	Standard Communication mode	Rs 485 / USB / Bluetooth (Optional: Wi-Fi)							
General Data	Ambient temperature range	-30°C ~ +60°C							
	Topology	Transformer less							
	Degree of protection	IP 65							
	Allowable relative humidity range	0~100%							
	Max. operating altitude	4000 m							
	Noise	<40 dB							
	Weight	17 kg				18 kg			
	Cooling	Natural							
	Dimension	430*385*182 mm							
	Display	LCD & Bluetooth + APP							
	Standard warranty	5 years (Optional: 7 & 10 years)							
Standard	EMC	EN 61000 - 3 - 2, EN 61000 - 3 - 3, EN 61000 - 3 -11, EN 61000-3-12, EN 61000 -6 -1, EN 61000 - 6 - 3							
	Safety standard	IEC 62109 -1 / 2, IEC 62116, IEC 61727, IEC 61683, IEC 60068(1,2,14,30)							
	Grid standards	AS/NZS 4777, VDE V 0124-100, V 0126-1-1, VDE-AR-N 4105, CEI 0-21/CEI 0-16, UNE 206 007-1, EN50549, G98/G99, EN50530, NB/T32004							

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Grid Tied Solar String Inverters

HIVERTER-Si-N Series

15 kW & 20 kW – Three Phase (1100 VDC)

NEW
GENERATION

Key Features

- Wide DC input range
- True three phase bridge, transformer-less topology
- Low sensitivity to the grid disturbance to avoid unnecessary disconnection from the grid
- 2 independent MPPT to ensure optimal energy harvest
- MPPT accuracy is more than 99.9%
- Wide operating temperature range from -30°C to 60°C
- IP 65 protection for Indoor & outdoor application
- Easy to install & maintain
- DC power overloading
- User friendly interface like RS 485/Wi-Fi
- Easy to read LCD display with all operational status & necessary data as per requirement
- Type II SPD (Surge Protection Device)
- Remote monitoring using a mobile based application through GPRS/Wi-Fi



Technical Standards

No.	IEC Standard	IEC Certificate
1	Environmental Testing	IEC 60068-2 (1,2,14,30)
2	Efficiency Measurement	IEC 61683
3	Product Safety Standard	IEC 62109-1, 2
4	Grid Connectivity Standard/ Utility Interface	IEC 61727
5	Test Procedure for Islanding Prevention Measures for Utility Interconnected PV Inverters	IEC 62116
6	Electromagnet Compatibility & Electro Magnet Interference	IEC 61000-6-2 IEC 61000-6-4

Technical Specifications

Solar String Inverter – 15 kW & 20 KW (3Ph.)

HIVERTER-Si-N Series Three Phase with Dual MPPT		Si-15K-N	Si-20K-N
Input (DC)	Recommended PV input power	22.5 kWp	30 kWp
	Number for independent MPPT	2	
	Number for DC inputs	2 / 2	
	Max. input voltage	1100 V	
	Start-up input voltage	160 V	
	Rated input voltage	650 V	
	MPPT voltage range	140 - 1000 V	
	Full load DC voltage range	420 V - 850 V	480 V - 850 V
	Max. input MPPT current	26 A / 26 A	26 A / 26 A
	Max. DC input short circuit current per MPPT	36 A / 36 A	36 A / 36 A
Output (AC)	Rated power	15 kW	20 kW
	Max. AC power	16.5 kVA	22 kVA
	Max. output current	23.9 A	31.9 A
	Nominal grid voltage	3 / N / PE, 230 V / 400 Vac	
	Grid voltage range	310Vac-480Vac (According to local standard)	
	Nominal frequency	50 Hz / 60 Hz	
	Grid frequency range	45 Hz - 55 Hz / 55 Hz - 65 Hz (According to local standard)	
	Active power adjustable range	0~100%	
	THDi	<3%	
	Power factor	1 default (adjustable ± 0.8)	
Performance	Max. Efficiency up to	98.60%	
	European weighted efficiency up to	98.20%	
	Self-consumption at night	<1W	
	MPPT efficiency	>99.9%	
Protection	DC reverse polarity protection	Yes	
	Anti-islanding Protection	Yes	
	Leakage Current protection	Yes	
	Ground Fault monitoring	Yes	
	PV-array string fault monitoring	Yes	
	Anti-reverse power function	Optional	
	DC Switch	Yes	
	Input / Output SPD	PV: type II standard, AC: type II standard	
Communication	Standard Communication mode	RS 485 / USB / Bluetooth (Optional: WIFI / Ethernet)	
General Data	Ambient temperature range	-30°C~+60°C	
	Topology	Transformer - less	
	Degree of protection	IP65	
	Allowable relative humidity range	0~100%	
	Max. operating altitude	4000m	
	Noise	<40dB	
	Weight	20 kg	22 kg
	Cooling	Fan	
	Dimension	520*430*189mm	
	Display	LCD & Bluetooth + APP	
	Standard Warranty	5 Years (Optional: 7 & 10 Years)	
Standard	EMC	EN 61000 - 6 - 1, EN 61000 - 6 - 3, EN 61000 - 6 - 3 - 11, EN 61000 - 6 - 3 - 12	
	Safety standard	IEC 62109 - 1 / 2, IEC 62116, IEC 61727, IEC 61683, IEC 60068 (1,2,14,30)	
	Grid standards	AS / NZS 4777, VDE V 0124 - 100, V 0126 - 1 - 1, VDE -AR - N 4105, CEI 0 - 21 / CEI 0 - 16, UNE 206 007 - 1, EN 50549, G 98/ G 99, EN 50530, NB / T 32004	

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HIVERTER-Si-N Series

25 kW to 50 kW – Three Phase (1100 VDC)

NEW
GENERATION

Key Features

- Wide DC input range
- True three phase bridge, transformer-less topology
- Low sensitivity to the grid disturbance to avoid unnecessary disconnection from the grid
- Independent MPPT to ensure optimal energy harvest
- MPPT accuracy is more than 99.9%
- Wide operating temperature range from -30°C to 60°C
- IP 65 protection for Indoor & outdoor application
- Easy to install & maintain
- DC power overloading
- User friendly interface like RS 485/Wi-Fi
- Easy to read LCD display with all operational status & necessary data as per requirement
- Reactive power controller
- Type II SPD (Surge Protection Device)
- String current monitoring
- Low Voltage Ride Through (LVRT) compliance
- Remote monitoring using a mobile based application through GPRS/Wi-Fi



Technical Standards

No.	IEC Standard	IEC Certificate
1	Environmental Testing	IEC 60068-2 (1,2,14,30)
2	Efficiency Measurement	IEC 61683
3	Product Safety Standard	IEC 62109-1, 2
4	Grid Connectivity Standard/ Utility Interface	IEC 61727
5	Test Procedure for Islanding Prevention Measures for Utility Interconnected PV Inverters	IEC 62116
6	Electromagnet Compatibility & Electro Magnet Interference	IEC 61000-6-2 IEC 61000-6-4

Technical Specifications

Solar String Inverter – 25 kW to 50 kW (3Ph.)

HIVERTER-Si-N Series Three Phase with Three / Four MPPT		Si-25K-N	Si-30K-N	Si-33K-N	Si-36K-N	Si-40K-N	Si-45K-N	Si-50K-N
Input (DC)	Recommended PV input power	37.5 kWp	45 kWp	49.5 kWp	54 kWp	60 kWp	67.5 kWp	75 kWp
	Max DC power for single MPPT	25 kWp						
	Number of independent MPPT	3	3	3	3	4	4	4
	Number of DC inputs	6	6	6	6	8	8	8
	Max. input voltage	1100 V						
	Start-up input voltage	200 V						
	Rated input voltage	620 V						
	MPPT operating voltage range	180 - 1000 V						
	Full power MPPT voltage range	480 V - 850 V	480 V - 850 V	510 V - 850 V	540 V - 850 V	480 V - 850 V	510 V - 850 V	540 V - 850 V
	Max. input current per MPPT	3 x 40					4 x 40	
	Maximum DC input short circuit current per MPPT	3 x 50					4 x 50	
Output (AC)	Rated power	25 kW	30 kW	33 kW	36 kW	40 kW	45 kW	50 kW
	Max. AC power	28 kVA	34 kVA	37 kVA	40 kVA	44 kVA	49.5 kVA	55 kVA
	Max. output current	42.4 A	51.5 A	56 A	60.6 A	66.7 A	75 A	83.3 A
	Nominal grid volatge	3 / N / PE , 230 / 400 Vac						
	Grid voltage range	310 Vac - 480 Vac (according to local standard)						
	Nominal frequency	50 / 60 Hz						
	Grid frequency range	45~55 Hz / 55~65 Hz (according to local standard)						
	Active power adjustable range	0~100%						
	THDi	<3%						
	Power factor	1 default (adjustable ±0.8)						
Performance	Max. Efficiency up to	98.60%				98.80%		
	European weighted efficiency up to	98.20%						
	Self-consumption at night	<3W						
Protection	DC reverse polarity protection	Yes						
	Anti-Islanding protection	Yes						
	Leakage current protection	Yes						
	Ground fault monitoring	Yes						
	PV-array string fault monitoring	Yes						
	Anti-reverse power function	Yes						
	DC Switch	Yes						
	Input / Output SPD	PV: type II standard, AC: type II standard						
Communication	Standard Communication mode	Rs 485 / USB / Bluetooth (Optional: Wi-Fi)						
General Data	Ambient temperature range	-30°C ~ +60°C						
	Topology	Transformer - less						
	Degree of protection	IP 65						
	Allowable relative humidity range	0~100%						
	Max. operating altitude	4000 m						
	Noise	<60 dB						
	Weight	36 kg				37 kg		
	Cooling	Fan						
	Dimension	585*480*220 mm						
	Display	LCD & Bluetooth + APP						
	Standard warranty	5 years (Optional: 7 & 10 years)						
Standard	EMC	EN 61000 - 6 - 2, EN 61000 - 6 - 3, EN 61000 - 3 - 11, EN 61000 - 3 - 12						
	Safety standard	IEC 62109 - 1 / 2, IEC 62116, IEC 61727, IEC 61683, IEC 60068 (1,2,14,30), IEC 60255						
	Grid standards	AS / NZS 4777, VDE V 0124 - 100, V 0126 - 1 - 1, VDE -AR - N 4105, CEI 0 - 21 / CEI 0 -16, UNE 206 007 - 1, EN50549, G98 / G99, EN 50530, NB / T32004						

Hitachi Hi-Rel Power Electronics Private Limited

Registered Office: B-52, Corporate House, Near Judges Bunglow, Bodakdev, Ahmedabad-380054, Gujarat, India.

Tel: +91-79-6604 6200, Fax: +91-79-6604 6243

Manufacturing Works: Plot No. SM 3 & 4, Sanand GIDC II, Industrial Estate, Bol Village, Sanand-382 110, Gujarat, India.

Tel: +91-2717-678 777, Fax: +91-2717-678 700

Gandhinagar Facility: B-14/1 & 171, GIDC Electronics Zone, Sector - 25, Gandhinagar - 382 028, Gujarat, India.

Tel: +91-79-6170 0500

 **Helpline No.:** (080) 6112 0800 (For Sales & Service Support)
  **contact@hitachi-hirel.com**
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Grid Tied Solar String Inverters

HIVERTER-Si-N Series

60 kW to 80 kW – Three Phase (1100 VDC)

NEW
GENERATION

Key Features

- Wide DC input range
- True three phase bridge, transformer-less topology
- Low sensitivity to the grid disturbance to avoid unnecessary disconnection from the grid
- 6 independent MPPT to ensure optimal energy harvest
- MPPT accuracy is more than 99%
- Wide operating temperature range from -30°C to 60°C
- IP 66 protection for Indoor & outdoor application
- Easy to install & maintain
- DC power overloading
- User friendly interface like RS 485/Wi-Fi
- Easy to read LCD display with all operational status & necessary data as per requirement
- Reactive power controller
- Type II SPD (Surge Protection Device)
- String current monitoring
- Low Voltage Ride Through (LVRT) compliance
- Remote monitoring using a mobile based application through Wi-Fi



Technical Standards

No.	IEC Standard	IEC Certificate
1	Environmental Testing	IEC 60068-2 (1,2,14,30)
2	Efficiency Measurement	IEC 61683
3	Product Safety Standard	IEC 62109-1, 2
4	Grid Connectivity Standard/ Utility Interface	IEC 61727
5	Test Procedure for Islanding Prevention Measures for Utility Interconnected PV Inverters	IEC 62116
6	Electromagnet Compatibility & Electro Magnet Interference	IEC 61000-6-2 IEC 61000-6-4

Technical Specifications

Solar String Inverter – 60 kW & 80 kW (3Ph.)

HIVERTER-Si-N Series Three Phase with Six MPPT		Si-60K-N	Si-80K-N
Input (DC)	Recommended PV input power	90 kWp	120 kWp
	Number for independent MPPT	6	
	Number for DC inputs	2 Per MPPT	
	Max. input voltage	1100 V	
	Start-up input voltage	200 V	
	Rated input voltage	620 V	
	MPPT voltage range	180 - 1000 V	
	Full load DC voltage range	550V - 800 V	
	Max. input MPPT current	6 x 32 A	6 x 40 A
	Max. DC input short circuit current per MPPT	6 x 50 A	6 x 60 A
Output (AC)	Rated power	60 kW	80 kW
	Max. AC power	66 kVA	88 kVA
	Max. output current	100 A	133.3 A
	Nominal grid voltage	3 / N / PE, 230 / 400 Vac	
	Grid voltage range	310 - 480 Vac (according to local standard)	
	Nominal frequency	50 / 60 Hz	
	Grid frequency range	45~55 Hz / 55~65 Hz (according to local standard)	
	Active power adjustable range	0~100%	
	THDi	<3%	
	Power factor	1 default (adjustable ± 0.8)	
Performance	Max. Efficiency up to	98.70%	
	European weighted efficiency up to	98.20%	
	Self-consumption at night	<2W	
Protection	DC reverse polarity protection	Yes	
	Anti-islanding Protection	Yes	
	Leakage Current protection	Yes	
	Ground Fault monitoring	Yes	
	PV-array string fault monitoring	Yes	
	Anti-reverse power function	Yes	
	DC Switch	Yes	
	Input / Output SPD	PV: type II standard, AC: type II standard	
Communication	Standard Communication mode	RS 485 / Bluetooth (Optional: WIFI / Ethernet)	
General Data	Ambient temperature range	-30°C~+60°C	
	Topology	Transformer - less	
	Degree of protection	IP 66	
	Allowable relative humidity range	0~100%	
	Max. operating altitude	4000 m	
	Weight	50 kg	
	Cooling	Fan	
	Dimension (mm)	687*561*275 mm	
	Display	LCD, App via Bluetooth	
	Standard Warranty	5 years (Optional: 7 & 10 years)	
Standard	EMC	EN 61000 - 6 - 2, EN 61000 - 6 - 3, EN 61000 - 3 - 11, EN 61000 - 3 - 12	
	Safety standard	IEC 62109 - 1 / 2, IEC 62116, IEC 61727, IEC 61683, IEC 60068(1,2,14,30), IEC 60255	
	Grid standards	VDE V 0124 - 100, V 0126 - 1 - 1, VDE - AR - N 4105, CEI 0 - 21/ CEI 0 - 16, UNE 206 007 - 1, EN 50549, G98 / G99, EN 50530	

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Tel: +91-79-6170 0500

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Grid Tied Solar String Inverters

HIVERTER-Si-N Series

110 kW & 125 kW - Three Phase (1100 VDC)

NEW
GENERATION

Key Features

- Wide DC input range
- True three phase bridge, transformer-less topology
- Low sensitivity to the grid disturbance to avoid unnecessary disconnection from the grid
- 10 independent MPPT to ensure optimal energy harvest
- MPPT accuracy is more than 99%
- Wide operating temperature range from -30°C to 60°C
- IP66 protection for Indoor & outdoor application
- Easy to install & maintain
- DC power overloading
- User friendly interface like RS 485/Wi-Fi
- Easy to read LCD display with all operational status & necessary data as per requirement
- Reactive power controller
- Type II SPD (Surge Protection Device)
- String current monitoring
- Low Voltage Ride Through (LVRT) compliance
- Remote monitoring using a mobile based application through Wi-Fi



Technical Standards

No.	IEC Standard	IEC Certificate
1	Environmental Testing	IEC 60068-2 (1,2,14,30)
2	Efficiency Measurement	IEC 61683
3	Product Safety Standard	IEC 62109-1, 2
4	Grid Connectivity Standard/ Utility Interface	IEC 61727
5	Test Procedure for Islanding Prevention Measures for Utility Interconnected PV Inverters	IEC 62116
6	Electromagnet Compatibility	IEC 61000-6-2 IEC 61000-6-3 IEC 61000-3-11 IEC 61000-3-12

Technical Specifications

Solar String Inverter – 110 kW & 125 kW (3Ph.)

HIVERTER-Si-N Series Three Phase, 10 MPPT		Si-110K-N	Si-125K-N
Input (DC)	Recommended PV input power	150 kWp	165 kWp
	Max. input voltage	1100 V	
	Rated input voltage	625 V	
	Start-up voltage	200 V	
	MPPT operating voltage range	180 V - 1000 V	
	Full power MPPT voltage range	500V - 850V	
	Number of MPP trackers	10	
	Number for DC inputs	20	
	Max. current per MPPT	10 x 40A	
	Max. input short circuit current	10 x 50A	
Output (AC)	AC output power	110 kVA @ 45°C / 100 kVA @ 50°C	125 kVA @ 45°C / 110 kVA @ 50°C
	Max. output current	167.2 A@380 V / 159.5 A@400 V / 153.1 A@415 V	190 A@380 V / 181.2 A@400 V / 174 A@415 V
	Rated grid voltage	3 / N / PE, 380 V / 400 V / 415 V	
	Grid voltage range	310 - 480 Vac	
	Nominal frequency	50 / 60 Hz	
	Grid frequency range	45~55 Hz / 55~65 Hz	
	Active power adjustable range	0~100%	
	TH Di	< 1%(@100% P)	
	Power factor	1 default (adjustable ± 0.8)	
Efficiency	Max. Efficiency	98.60%	
	European weighted efficiency up to	98.30%	
Protection	DC reverse polarity protection	Yes	
	Anti-islanding protection	Yes	
	Leakage current protection	Yes	
	Ground fault monitoring	Yes	
	PV-array string fault monitoring	Yes	
	DC switch	Yes	
	PID recovery	Yes	
	AFCI	Yes	
	SPD protection	PV: type II standard, AC: type II standard	
Communication	Standard Communication Mode	RS 485, WiFi	
General Data	Ambient temperature range	-30°C ~ +60°C	
	Topology	Transformer less	
	Degree of protection	IP 66	
	Allowable relative humidity range	0 - 100%	
	Max. operating altitude	4000 m (> 3000 m derating)	
	Weight	75 kg	
	Cooling	Smart forced air cooling	
	Dimension	970 x 695 x 325 mm	
	Display	LCD & Bluetooth + APP	
Standard	EMC	EN 61000 - 6 - 2, EN 61000 - 6 - 3, EN 61000 - 3 - 11, EN 61000 - 3 - 12	
	Safety standard	IEC 62109 - 1/2, IEC 62116, IEC 61727, IEC 61683, IEC 60068 (1,2,14,30), IEC 60255	
	Grid standards	VDE V 0124 - 100, V 0126 - 1 - 1, VDE - AR- N 4105, CEI 0 - 21 / CEI 0 - 16, UNE 206 007 - 1, EN 50549, G98 / G99, EN 50530	

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Grid Tied Solar String Inverters

250 kW to 255 kW (3Ph.)

Key Features

- Wide DC input range
- True three phase bridge, transformer-less topology
- Low sensitivity to the grid disturbance to avoid unnecessary disconnection from the grid
- 12 independent MPPT to ensure optimal energy harvest
- MPPT accuracy is more than 99.9%
- Wide operating temperature range from -30°C to 60°C
- IP66 protection for Indoor & outdoor application
- Easy to install & maintain
- DC power overloading
- User friendly interface like RS 485/Wi-Fi
- Easy to read LCD display with all operational status & necessary data as per requirement
- Reactive power controller
- Type II SPD (Surge Protection Device)
- String current monitoring
- Low Voltage Ride Through (LVRT) compliance
- Remote monitoring using a mobile based application through GPRS/Wi-Fi



Technical Standards

No.	IEC Standard	IEC Certificate
1	Environmental Testing	IEC 60068-2 (1,2,14,30)
2	Efficiency Measurement	IEC 61683
3	Product Safety Standard	IEC 62109-1, 2
4	Grid Connectivity Standard/Utility Interface	IEC 61727
5	Test Procedure for Islanding Prevention Measures for Utility Interconnected PV Inverters	IEC 62116
6	Electromagnet Compatibility & Electro Magnet Interference	IEC 61000-6-2 IEC 61000-6-4 IEC 61000-3-11 IEC 61000-3-12

Technical Specifications

Solar String Inverter - 250 kW to 255 kW (3Ph.)

Hivertor Si Series Three Phase		Si-250K-HV	Si-255K-HV
Input (DC)	Max. input voltage	1500V	
	Rated input voltage	1160V	
	Start-up voltage	550V	
	MPPT operating voltage range	500V- 1500V	
	Full power MPPT voltage range	800V-1300V	
	Number of MPP trackers	12	
	Number for DC inputs	24	
	Max. input current per MPPT	30A x 12	
	Max. input short circuit current per MPPT	50A x 12	
Output (AC)	AC output power	250kVA@30°C / 235kVA@40°C / 220kVA@50°C	255kVA@30°C / 235kVA@40°C / 220kVA@50°C
	Max. output current	180.5A	184A
	Nominal grid voltage	3/PE, 800Vac	
	Grid voltage range	640Vac-920VVac	
	Nominal frequency	50/60Hz	
	Grid frequency range	45~55Hz / 55~ 65Hz (According to local standard)	
	Active power adjustable range	0-100%	
	TH Di	<3%	
	Power factor	1 default (adjustable± 0.8)	
Performance	Max. Efficiency	99.02%	
	European weighted efficiency up to	98.70%	
Protection	DC reverse polarity protection	Yes	
	Anti-islanding protection	Yes	
	Leakage current protection	Yes	
	Ground fault monitoring	Yes	
	PV-array string fault monitoring	Yes	
	Zero voltage ride through	Yes	
	DC switch	Yes	
	Anti-PID protection	Optional	
	AFCI	Optional	
	Protection class/Overvoltage category	I/III	
	Input/Output SPD	PV: type II standard, AC: type II standard	
	Communication	RS485 /USB /Bluetooth, Optional: WiFi /GPRS /PLC	
General Data	Ambient temperature range	-30°C ~ +60°C	
	Self-consumption at night	<2W	
	Topology	Transformer less	
	Degree of protection	IP66	
	Allowable relative humidity range	0-100%	
	Max. operating altitude	4000m	
	Noise	≤60 Db	
	Weight	99kg	
	Cooling	Smart forced air cooling	
	Dimension (L*W*H)	1100.5 x 713.5 x 368mm	
	Display	LCD & Bluetooth + APP	
Standard	EMC	IEC 61000-6-2, IEC 61000-6-4, IEC 61000-3-11, IEC 61000-3-12	
	Safety standard	IEC62109-1/2, IEC62116, IEC61727, IEC-61683, IEC60068 (1,2,14,30)	

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Grid Tied Solar String Inverters

350 kVA (3Ph.)

Key Features

- Wide DC input range
- True three phase bridge, transformer-less topology
- Low sensitivity to the grid disturbance to avoid unnecessary disconnection from the grid
- 8 independent MPPT to ensure optimal energy harvest
- MPPT accuracy is more than 99%
- Wide operating temperature range from -30°C to 60°C
- IP66 protection for Indoor & outdoor application
- Easy to install & maintain
- DC power overloading
- User friendly interface like RS 485/Wi-Fi
- Reactive power controller
- Type II SPD (Surge Protection Device)
- String current monitoring
- Low Voltage Ride Through (LVRT) compliance
- Remote monitoring using a mobile based application through Wi-Fi



Technical Standards

No.	IEC Standard	IEC Certificate
1	Environmental Testing	IEC 60068
2	Efficiency Measurement	IEC 61683
3	Product Safety Standard	IEC 62109-1, 2
4	Grid Connectivity Standard/ Utility Interface	IEC 61727
5	Test Procedure for Islanding Prevention Measures for Utility Interconnected PV Inverters	IEC 62116
6	Electromagnet Compatibility & Electro Magnet Interference	IEC 61000
7	Overall efficiency of grid connected photovoltaic inverters	EN 50530
8	Product safety requirements for measuring relays and protection equipment having a rated a.c. voltage up to 1 000 V	IEC 60255

Technical Specifications

Solar String Inverter - 350 kVA (3Ph.)

Hiverter Si Series Three Phase		HIVERTER Si-350-N0
Input (DC)	Max. input voltage	1500V
	Rated input voltage	1160V
	Start-up voltage	550V
	MPPT operating voltage range	500 - 1500Vdc
	Number of MPPT's	8
	Number for DC inputs	32
	Max. input MPPT current	8 * 60A
	Max. input short circuit current	8 * 100A
Output (AC)	AC output power	352kVA@35°C/310kVA@50°C/300kVA@52°C
	Max. output current	254.1A
	Rated output voltage	3/PE, 800Vac
	Output voltage range	640V-920Vac
	Rated output frequency	50/60Hz
	Output frequency range	45~55Hz / 55~ 65Hz (According to local standard)
	Active power adjustable range	0-100%
	THDi	<3%
	Power factor	1 (adjustable +/- 0.8)
Performance	Max. Efficiency	99.05%
	European weighted efficiency	98.80%
Protection	DC reverse polarity protection	Yes
	Anti-islanding protection	Yes
	Leakage current protection	Yes
	Ground fault monitoring	Yes
	PV-array string fault monitoring	Yes
	DC switch	Yes
	SPD	PV: type II standard, AC: type II standard
General Data	Ambient temperature range	-30°C -- +60°C
	Topology	Transformer less
	Degree of protection	IP66
	Allowable relative humidity range	0-100%
	Max. operating altitude	4000m
	Cooling	Smart air cooling
	Dimension	1159*828*366 mm
	Weight	<113kg
	Display	LED, Bluetooth + APP
	Communication	RS485, PBUS
	EMC	EN 61000
Standard	Safety standard	IEC62109, IEC62116, IEC61727, IEC-61683, IEC60068

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Grid Tied Solar Central Outdoor Inverters

3125 kVA & 2500 kVA (1500VDC)

Generating

3 GW+

Renewable
Power
in Indian
Solar Sector

**HIVERTER
NP215L Series**



Highly Efficient Conversion Technology

About Grid Tied Solar Central Outdoor Inverters

Highly Advanced | Reliable | Highly Efficient | High Performance

Hitachi, with more than 100 years of legacy worldwide and with installation base of Grid Tied Solar Central Inverters in India, brings to you the 3.125 MW & 2.5 MW 1500 VDC Solar Central Outdoor Inverters to maximize the energy yield for multi megawatt & utility scale power plants, available with highly efficient conversion technology. It is a critical BOS (Balance of System) component in a solar photovoltaic system, which converts DC power generated by photovoltaic (solar) array to AC power that is fed to the utility power grid system.

Highlights

- Outdoor IP54 unit: Savings on outdoor civil construction or containerized solution
- 3 level PWM technology to achieve Euro Efficiency @98.6% at Min. DC Input Voltage considering similar outdoor category
- Night time reactive power compensation function
- MPPT controllers having voltage range 950 to 1300 V
- Latest FRT
- Easy to install & maintain
- Low auxiliary power consumption due to variable fan speed control according to power feeding
- DC over power loading up to 200%

Compliance

Safety Testing	IEC 62109-1	Safety of power converters to use in photovoltaic power systems
	IEC 62109-2	Safety of power converters to use in photovoltaic power systems
	IEC 62116	Utility-interconnected photovoltaic inverters - Test procedure of islanding prevention
Enclosure Protection	IEC 60529	IP protection
Performance	IEC 61683	Power conditioners: Procedure for efficiency measurements.
EMC	IEC 61000-6-2	Emission requirements
	IEC 61000-6-4	Immunity requirements
Environmental Testing	60068-2-1	Cold test
	60068-2-2	Dry heat test
	60068-2-14	Change of temperature
	60068-2-30	Damp heat cyclic test
Electroacoustic	IEC 61672-1	Sound level meters part-1
LVRT	IEC 62910-2015	LVRT
Harmonics Control	IEEE-519	Recommended practice and requirements for harmonic control in electrical power system
Indian Grid Connectivity	CEA	Technical standard for the connectivity to the grid - for India only (Hitachi PCS can follow the updated CEA guidelines with the available flexible features to meet future grid protection demand)

Technical Specifications

Model		HIVERTER NP215L	
Solar PCS Rating (AC)	3125 kVA	2500 kVA	
DC-AC Conversion System	3 Level High Frequency PWM Inverter		
Control System	MPPT and AC Current Control		
Grid Data			
Power Rating	3125 kVA @50 °C ambient 3375 kVA @25 °C ambient	2500 kVA @50 °C ambient 2700 kVA @25 °C ambient	
AC Grid Connection	Three Phase		
Maximum AC Current	2775 A @50 °C ambient 2997 A @25 °C ambient	2223 A @50 °C ambient 2400 A @25 °C ambient	
Output Waveform THDi	<3% at rated current		
Nominal Output Voltage (Rated voltage)	650 V AC		
Output Voltage Range	650 V ± 10%		
Output Frequency Range	50/60 Hz ± 2 %		
Transformer	Transformer-less Design		
Peak Efficiency	98.7% at Min DC Input Voltage	99% at Min DC Input Voltage	
Euro Efficiency	98.3 % at Min DC Input Voltage	98.6 % at Min DC Input Voltage	
Power Factor (Adjustable)	0.80 Lead to 0.80 Lag (with in Max. kVA limited at maximum Ampere rating)		
PV Side			
Maximum DC Power loading (1)	4.062 MW	3.25 MW	
Start Up Voltage(4)	950 V		
MPPT Voltage Range (2)	DC 950 to 1300V		
Maximum DC Input Voltage (OC)	1500 V		
Minimum DC Input Voltage	950 V		
Maximum DC Input Current	3335 A @50 °C ambient 3625 A @25 °C ambient	2668 A @50 °C ambient 2900 A @25 °C ambient	
No of String Inputs	20	16	
No of MPPT functions	1		
Auxiliary Power Supply			
Control Power in Operation	AC 230V 1Φ (Internal 200 W during operation)		
Cooling Fan Power	AC 230V 1Φ (Internal 5000 W (max) during full load operation at 50 °C ambient. Consumption will reduce according to load and ambient temperature)		
Cooling control			
Cooling Type	Heavy Duty fans with variable speed & high service life (Each Inverter)		
Protections			
Islanding Protection	Yes		
Temperature Protection	Yes		
Ground Fault detector	Yes		
Grid Monitoring	Yes		
AC Short Circuit and Over Current	Yes		
AC & DC Over Voltage and Temperature	Yes		
Reactive Power Control	Yes		
Automatic Wake-up and Shut-down	Yes		
Breaker on AC Side	Air Circuit Breaker (ACB) at output		
LVRT	Yes		
Switch on DC Side	DC Disconnect Switch		
Negative grounding	Yes (Optional)		
Communication			
Visual Display	Colour LCD Display with Touch Screen (5.7 inch)		
SCADA Interface	Rs485 Modbus / Modbus TCP-IP / TC P-IP over Ethernet		
Data Logging	Yes		
Access Interface / Field Bus Connectivity	RS 485 or TCP-IP (Ethernet)		
Digital Input / Relay Output	8 (Optional)		
Mechanical			
Dimensions (H x W x D) mm	2214 x 3482 x 1406 (Including Air duct)		
Weight (kg)	4000 (approximate)	3500 (approximate)	
Environmental Limits			
Installation	Outdoor		
Enclosure Protection	IP 54 with Electronics IP65		
Operating Temperature range (3)	(-)0° C to (+) 60° C		
Relative Humidity	15% to 95% (Non Condensing)		
Maximum Noise Level	<= 90 dBA at a distance of 1 meter		
Altitude	0 to 2000 meters		
Standards			
Applicable Standard	IEC-62109-1, IEC-62109-2, IEC-62116, IEC-61683, IEC 61000-6-2, IEC 61000-6-4, IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-14, IEC 60068-2-30, CEA		

Notes: (1) Maximum DC power can be loaded up to 30%. Same can be discussed during detail engineering. (2) EPC/Plant designer should select MPPT voltage range within mentioned DC voltage range. (3) 10 % de-rating per degree rise in temperature from 50° C to 60° C. (4) Start up voltage can be adjusted at site based on site condition.

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Manufacturing Works: Plot No. SM 3 & 4, Sanand GIDC II, Industrial Estate, Bol Village, Sanand-382110, Gujarat, India.

Tel: +91-2717-678 777, Fax: +91-2717-678 700

Gandhinagar Facility: B-14/1 & 171, GIDC Electronics Zone, Sector - 25, Gandhinagar - 382 028, Gujarat, India.

Tel: +91-79-6170 0500

Helpline Number.: (080) 6112 0800 (For Sales & Service Support) contact@hitachi-hirel.com www.hitachi-hirel.com

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